

RF Exposure Evaluation Report

Product : Wio-LR1121
Trade mark : seed studio
Model/Type reference : Wio-LR1121, Wio-LR1121-N
Serial Number : N/A
Report Number : EED32R81228403
FCC ID : Z4T-WIOLR1121
Date of Issue : Apr. 07, 2026
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091
KDB 447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

Seed Technology Co., Ltd.

**9F, G3 Building, TCL International E City, Zhongshanyuan Road, Nanshan
District, Shenzhen, Guangdong Province, P.R.C**

Prepared by:

**Centre Testing International Group Co., Ltd.
Hongwei Industrial Park, Zone 70, Bao'an District,
Shenzhen, Guangdong, China**

TEL: +86-755-3368 3668

FAX: +86-755-3368 3385

Compiled by:

Lucas Lu

Lucas Lu

Reviewed by:

Keven Tan

Keven Tan

Approved by:

Aaron Ma

Aaron Ma

Date:

Apr. 07, 2026



Check No.: 7831180725

1 Contents

	Page
1 CONTENTS	2
2 GENERAL INFORMATION	3
2.1 CLIENT INFORMATION	3
2.2 GENERAL DESCRIPTION OF EUT	3
2.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	3
2.4 TEST LOCATION	5
2.5 DEVIATION FROM STANDARDS	5
2.6 ABNORMALITIES FROM STANDARD CONDITIONS	5
2.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER	5
3 SAR EVALUATION	6
3.1 RF EXPOSURE COMPLIANCE REQUIREMENT	6
3.1.1 Limits	6
3.1.2 Test Procedure	6
3.1.3 EUT RF Exposure Evaluation	7

2 General Information

2.1 Client Information

Applicant:	Seeed Technology Co., Ltd.
Address of Applicant:	9F, G3 Building, TCL International E City, Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong Province, P.R.C
Manufacturer:	Seeed Technology Co., Ltd.
Address of Manufacturer:	9F, G3 Building, TCL International E City, Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong Province, P.R.C
Factory:	Shenzhen Xinxian Technology Co., Limited
Address of Factory:	F5, Building B17, Hengfeng Industrial City, No. 739 Zhoushi Rd, Baoan District, Shenzhen, Guangdong, P.R.C.

2.2 General Description of EUT

Product Name:	Wio-LR1121
Model No.:	Wio-LR1121, Wio-LR1121-N
Test model No.:	Wio-LR1121, Wio-LR1121-N
Trade Mark:	seeed studio

2.3 Product Specification subjective to this standard

Frequency Range:	2.4GHz: FSK: 2402MHz~2480MHz 812KHz Lora:2403MHz~2479MHz 900MHz: LoRa(DTS) 500KHz bandwidth: 903MHz~914.2MHz LoRa(FHSS) 125KHz bandwidth: 902.3MHz~914.9MHz LR-FHSS 1.523MHz bandwidth: 903MHz~914.2MHz
Modulation Type:	2.4GHz: FSK 900MHz: LoRa/LR-FHSS
Test Power Grade:	Default
Test Software of EUT:	sscom5.13.1.exe
Antenna Type:	FPC Antenna Spring Antenna Fiberglass Antenna
Antenna Gain:	2.4GHz: FPC Antenna: 2.53dBi Spring Antenna: 2.55dBi Fiberglass Antenna: 5.03dBi 900MHz: FPC Antenna: -2.1dBi Spring Antenna: 1.61dBi Fiberglass Antenna: 9.28dBi
Power Supply:	DC 5V

Sample Received Date:	Jul.17, 2025	
Sample tested Date:	Jul.17, 2025 to Feb. 08, 2026	
Remark:		
Model No.: Wio-LR1121, Wio-LR1121-N		
Model Wio-LR1121, Wio-LR1121-N was tested, The electrical circuit design, layout, components used, and internal wiring are identical, Except for the presence of an IPEX4 connector and antenna output path configuration via an internal 0 Ω resistor.		
Feature	Wio-LR1121	Wio-LR1121-N
IPEX4 Connector	Present	Not Present
Antenna Output Path	Routed to IPEX4 Connector	Routed to Module Pad
Configuration Method	0 Ω resistor bypasses pad	0 Ω resistor connects to pad
RF Performance	Identical	Identical
Functionality	Identical	Identical
Other Components	Identical	Identical

2.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Hongwei Industrial Park, Zone 70, Bao'an District, Shenzhen, Guangdong, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164, Test Firm Registration No.: 260439

2.5 Deviation from Standards

None.

2.6 Abnormalities from Standard Conditions

None.

2.7 Other Information Requested by the Customer

None.

3 SAR Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.1.3 EUT RF Exposure Evaluation**For Stand alone:**

Freq. (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	13	5.03	15.88	38.73	3060.00	0.0127	Pass
@900MHz	20	20.33	9.28	27.46	557.19	1866.40	0.2985	Pass

Note:

- ① EIRP=conducted power+antenna gain;
- ② $ERP = EIRP - 2.15$;
- ③ $EIRP(dBm) = \text{Field strength of the fundamental signal}(dBuV/m@3m) - 95.23$;
- ④ $ERP(mW) = 10^{(ERP(dBm)/10)}$;
- ⑤ The estimation distance is 20cm;
- ⑥ The test data please refer to the report of EED32R81228401 and EED32R81228402, only the worst case data was recorded in the report.

For Simultaneous Transmission:

As MPE ratio (2.4GHz+900MHz)=0.0127+0.2985=0.3112 < 1, it's deemed to fulfil the RF exposure requirement.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
5. Without written approval of CTI, this report can't be reproduced except in full;

*** End of Report ***